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Date of Deposit: May 6, 2005

ATTORNEY'S DOCKET NO: N0400.70001US01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: T. Warren Weeks, Jr. et al.
Serial No: 10/675,798
Conf. No.: 2233
Filed: September 30, 2003
For: GALLIUM NITRIDE MATERIALS AND METHODS
Examiner: Gwendolyn A. Blackwell Rudasil
Art Unit: 1775

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are the following documents:

- Information Disclosure Statement, with PTO Form-1449;
- Copies of references cited;
- Check in the amount of \$180.00; and
- Return Receipt Postcard.

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 646-8000, Boston, Massachusetts.

A check in the amount of \$180.00 is enclosed. If there is a deficiency, the Commissioner is hereby authorized to charge Deposit Account No. 23/2825. A duplicate of this sheet is enclosed.

Respectfully submitted,

By: 

Robert H. Walat, Reg. No. 46,324
Randy J. Pritzker, Reg. No. 35,986
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600 Atlantic Avenue
Boston, MA 02210
Telephone (617) 720-3500

Docket No. N0400.70001US01
Dated: May 6, 2005
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**STATEMENT FILED PURSUANT TO THE DUTY OF
DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98**

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, the Applicant requests consideration of this Information Disclosure Statement.

PART I: Compliance with 37 C.F.R. §1.97

This Information Disclosure Statement has been filed more than three months after the filing date of this application and after the mailing date of the first Office Action, but before the mailing date of either a final action under 37 C.F.R. §1.113 or a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in this application.

The fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) is enclosed.

PART II: Information Cited

The Applicant hereby makes of record in the above-identified application the information listed on the attached form PTO-1449 (modified). The order of presentation of the references should not be construed as an indication of the importance of the references.

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PART III: Remarks

Documents cited on the attached form PTO-1449 (modified) are enclosed unless otherwise indicated on the attached form PTO-1449 (modified). It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
2. The enclosed form PTO-1449 be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;
3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

Serial No.: 10/675,798
Conf. No. 2233

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Art Unit: 1775

An early and favorable action is hereby requested.

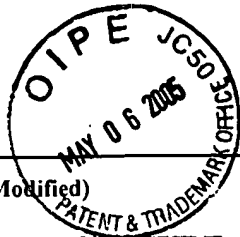
Respectfully submitted,



By: _____

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Randy J. Pritzker, Reg. No. 35,986
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600 Atlantic Avenue
Boston, MA 02210
Telephone (617) 720-3500

Docket No. N0400.70001US01
Dated: May 6, 2005
xNDD



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|---|---|----|---|--|--|---|--|
| FORM PTO-1449/A and B (Modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 10/675,798 | | DOCKET NO: N0400.70001US01 | |
| | | | | FILING DATE: September 30, 2003 | | CONF. NO. 2233 | |
| | | | | APPLICANT: T. Warren Weeks Jr., et al. | | | |
| | | | | GROUP ART UNIT: 1775 | | EXAMINER: Gwendolyn A. Blackwell Rudasil | |
| Sheet | 1 | of | 2 | | | | |

U.S. PATENT DOCUMENTS

| Examiner's Initials# | Cite No. | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication or of issue of Cited Document MM-DD-YYY |
|----------------------|----------|----------------------|-----------|---|--|
| | | Number | Kind Code | | |
| | | 5,496,767 | | Yoshida | 03/05/1996 |
| | | 5,880,485 | | Marx et al. | 03/09/1999 |
| | | 5,923,950 | | Ishibashi et al. | 07/13/1999 |
| | | 6,153,010 | | Kiyoku et al. | 11/28/2000 |
| | | 6,180,270 | | Cole et al. | 01/30/2001 |
| | | 6,291,319 | | Yu et al. | 09/18/2001 |
| | | 6,324,200 | | Kamiyama et al. | 11/27/2001 |
| | | 6,328,796 | | Kub et al. | 12/11/2001 |
| | | 6,358,770 | | Itoh et al. | 03/19/2002 |
| | | 6,377,597 | | Okumura | 04/23/2002 |
| | | 6,391,748 | | Temkin et al. | 05/21/2002 |
| | | 6,420,197 | | Ishida et al. | 07/16/2002 |
| | | 6,440,823 | | Vaudo et al. | 08/27/2002 |
| | | 6,459,712 | | Tanaka et al. | 10/01/2002 |
| | | 6,524,932 | | Zhang et al. | 02/25/2003 |
| | | 6,548,333 | | Smith | 04/15/2003 |
| | | 6,610,144 | | Mishra et al. | 08/26/2003 |
| | | 6,707,074 | | Yoshii et al. | 03/16/2004 |
| | | 6,765,240 | | Tischler et al. | 07/20/2004 |

FOREIGN PATENT DOCUMENTS

| Examiner's Initials# | Cite No. | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Document (not necessary) | Date of Publication of Cited Document MM-DD-YYYY | Translation (Y/N) |
|----------------------|----------|-------------------------|--------|-----------|--|---|-------------------|
| | | Office/Country | Number | Kind Code | | | |

OTHER ART — NON PATENT LITERATURE DOCUMENTS

| Examiner's Initials# | Cite No | Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published. | Translation (Y/N) | |
|----------------------|---------|---|-------------------|--|
| | | BYKHOVSKI, A.D. et al., "Elastic Strain Relaxation in GaN-AlN-GaN Semiconductor-Insulator-Semiconductor Structures," <i>J. Appl. Phys</i> 78(6):3691 (1995) | | |
| | | DADGAR, A. et al., "Metalorganic Chemical Vapor Phase Epitaxy of Crack-Free GaN on Si (111) Exceeding 1 μ m in Thickness," <i>Jpn J. Appl. Phys.</i> 39:L1183 (2000). | | |
| | | GUHA, S. et al., "Ultraviolet and Violet GaN Light Emitting Diodes on Silicon," <i>Appl. Phys. Lett.</i> 72(4):415 (1998) | | |
| | | HAFFOUZ, S. et al., "The Effect of the Si/N Treatment of a Nitridated Sapphire Surface on the Growth Mode of GaN in Low-Pressure Metalorganic Vapor Phase Epitaxy," <i>Appl. Phys. Lett.</i> 73(9):1278 (1998). | | |
| | | LAHRECHE, H. et al., "Optimisation of AlN and GaN Growth by Metalorganic Vapour-Phase Epitaxy (MOVPE) on Si(111)", <i>J. Crystal Growth</i> 217:13 (2000). | | |
| | | LEI, T. et al., "Epitaxial Growth of Zinc Blende and Wurtzitic Gallium Nitride Thin Films on (001) Silicon," <i>Appl. Phys. Lett.</i> 59(8):944 (1991). | | |
| | | NIKISHIN, S.A. et al., "High Quality GaN Grown on Si(111) by Gas Source Molecular Beam Epitaxy with Ammonia," <i>Appl. Physics</i> 75(14):2073 (1999) | | |

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|---|----------|----|---|---------------------------------|-----------------------------|
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| | | | | GROUP ART UNIT: 1775 | EXAMINER: Blackwell Rudasil |
| Sheet | <u>2</u> | of | 2 | | |

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|--|--|--|--|--|
| | | OHTANI, A. et al., "Microstructure and Photoluminescence of GaN Grown on Si(111) by Plasma-Assisted Molecular Beam Epitaxy," <i>Appl. Phys. Lett.</i> 65(1):61 (1994) | | |
| | | OSINSKY, A. et al., "Visible-Blind GaN Schottky Barrier Detectors Grown on Si(111)," <i>Appl. Phys. Lett.</i> 72(5):551 (1998) | | |
| | | SEMOND, F. et al., "GaN Grown on Si(111) Substrate: From Two-Dimensional Growth to Quantum Well Assessment," <i>Appl. Phys. Lett.</i> 75(1):82 (1999) | | |
| | | SEON, M. et al., "Selective Growth of High Quality GaN on Si(111) Substrates," <i>Appl. Phys. Lett.</i> 76(14):1842 (2000) | | |
| | | TANAKA, S. et al., "Defect Structure in Selective Area Growth GaN Pyramid on (111)Si Substrate," <i>Appl. Phys. Lett.</i> 76(19):2701 (2000). | | |
| | | TRAN, C. et al., "Growth of InGaN/GaN Multiple-Quantum-Well Blue Light-Emitting Diodes on Silicon by Metalorganic Vapor Phase Epitaxy," <i>Appl. Phys. Lett.</i> 75(11):1494 (1999). | | |
| | | ZHAO, G.Y. et al., "Growth of Si Delta-Doped GaN by Metalorganic Chemical-Vapor Deposition," <i>Appl. Phys. Lett.</i> 77(14):2195 (2000) | | |
| | | ZHAO, Z.M. et al., "Metal-Semiconductor-Metal GaN Ultraviolet Photodetectors on Si(111)," <i>Appl. Phys. Lett.</i> 77(3):444 (2000) | | |

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|----------|-----------------|
| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. 09/736,972, filed December 14, 2000, and relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).

[NOTE - The Office hereby waives the requirement under 37 CFR 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication for all U.S. national patent applications filed after June 30, 2003 and for all international applications that have entered the national stage under 35 USC 371 after June 30, 2003. See 37 CFR 1.491(b). For all patent applications filed on or before June 30, 2003, copies of cited U.S. patents and patent application publications are still required unless an eIDS is filed. Copies of all other patent(s), publication(s), or other information listed must still be provided, even if it was previously submitted to, or cited by, the U.S. Patent Office in an earlier application, unless the earlier application is identified by the IDS and is relied upon for an earlier filing date under 35 U.S.C. §120, and the copy was provided in the earlier application.]